

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: Slawson Exploration Company, Inc.
Well Name/Number: Caltrop 1-28H
Location: NE NE Section 28 T22N R57E
County: Richland, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 25-35 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation well, 15,042' MD/10,490' TVD.

Possible H₂S gas production: Slight chance H₂S gas from Mississippian Formations.

In/near Class I air quality area: No Class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: If there are existing pipelines for natural gas in the area then gas must be tied into system or if no gathering system nearby associated gas can be flared under Board Rule 36.22.1220. A single lateral 15,042' MD/10,490' TVD, Bakken Formation horizontal well test.

Water Quality

(possible concerns)

Salt/oil based mud: Yes intermediate string casing hole will be drilled with oil based invert drilling fluids and the horizontal lateral will be drilled with oil based invert drilling fluids. Surface casing hole will be drilled with freshwater and freshwater mud system.

High water table: Possible high water table in the area of review.

Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary drainage to the Fox Creek, about in the middle of this location.

Water well contamination: No, closest water wells are about 3/8 of a mile to the northwest, about 3/8 of a mile to the east and about 7/8 of a mile to the southeast from this location. Depth of these water wells range from 113' to 400'. Surface hole will be drilled with freshwater and surface casing will be cemented to surface from 1550'. Recommend that surface hole be drilled to 1703' and 1703' of surface casing be run to cover the Base of the Fox Hills Formation.

Porous/permeable soils: No, silty sandy clay soils.

Class I stream drainage: No, Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☒ Berms/dykes, re-routed drainage

☒ Closed mud system

☒ Off-site disposal of **liquids** (in approved facility)

☐ Other: _____

Comments: 1703' surface casing to be set to protect freshwater zones and to cover the Fox Hills aquifer. Adequate surface casing and operational BOP equipment will prevent problems. Drainage may have to be diverted around this location.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: No high erosion potential, location will require small cut, up to 9.7' and small fill, up to 6.2', required.

Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, a large well site 450'X405'

Damage to improvements: Slight, surface use is grazing land.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Access will be over existing county road, #120. An access road will be built into location off the existing county road, #120, about 5632' of an existing trail will be upgraded for heavy trucks and a small amount of new road will be built off the existing trail into this location. Closed Loop Mud System will be used. Cuttings will be buried in the lined cuttings pit. Oil based invert drilling fluids will be recycled. Completion fluids will be hauled to a Class II disposal. Pit will be allowed to dry before being backfilled. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: No residences are within 1 mile from this location.

Possibility of H2S: Slight chance H2S, from Mississippian Formations.

Size of rig/length of drilling time: Triple drilling rig 25 to 35 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Distance sufficient to mitigate noise problems associated with the drilling of this well.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species Threatened or endangered species listed in Richland County by USFW service are Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website lists the following as "Species of Concern" two (2): Baird's Sparrow and the Whooping Crane. NH tracker website lists the following as "Potential Species of Concern": four (4) Hayden's Shrew, Chimney Swift, Eastern Screech-Owl and Tennessee Warbler.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private grazing surface lands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern are discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: Private grazing surface lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns.

Remarks or Special Concerns for this site

A single lateral wildcat Bakken horizontal well test, 15,042' MD/10,490' TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector

Date: April 28, 2012

Other Persons Contacted:

(Name and Agency)

Montana Bureau of Mines and Geology, Groundwater Information Center website.

(subject discussed)

Water wells in Richland County

(date)

April 28, 2012

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Richland County

(subject discussed)

April 28, 2012

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T22N R57E

(subject discussed)

April 28, 2012

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____